



# Structure of Earth Introduction

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The book, *Journey to the Center of the Earth*, written by Jules Verne in 1864 tells the story of three adventurers who undertake a secret expedition beneath the Earth's surface, down through geologic space and time to an imagined subterranean world in the center of the Earth.

Consider what you've learned over your lifetime. What do you think is at the center of the Earth? What do you think it is made of? How do you think the world was formed?

# Structure of Earth

## Guided Practice

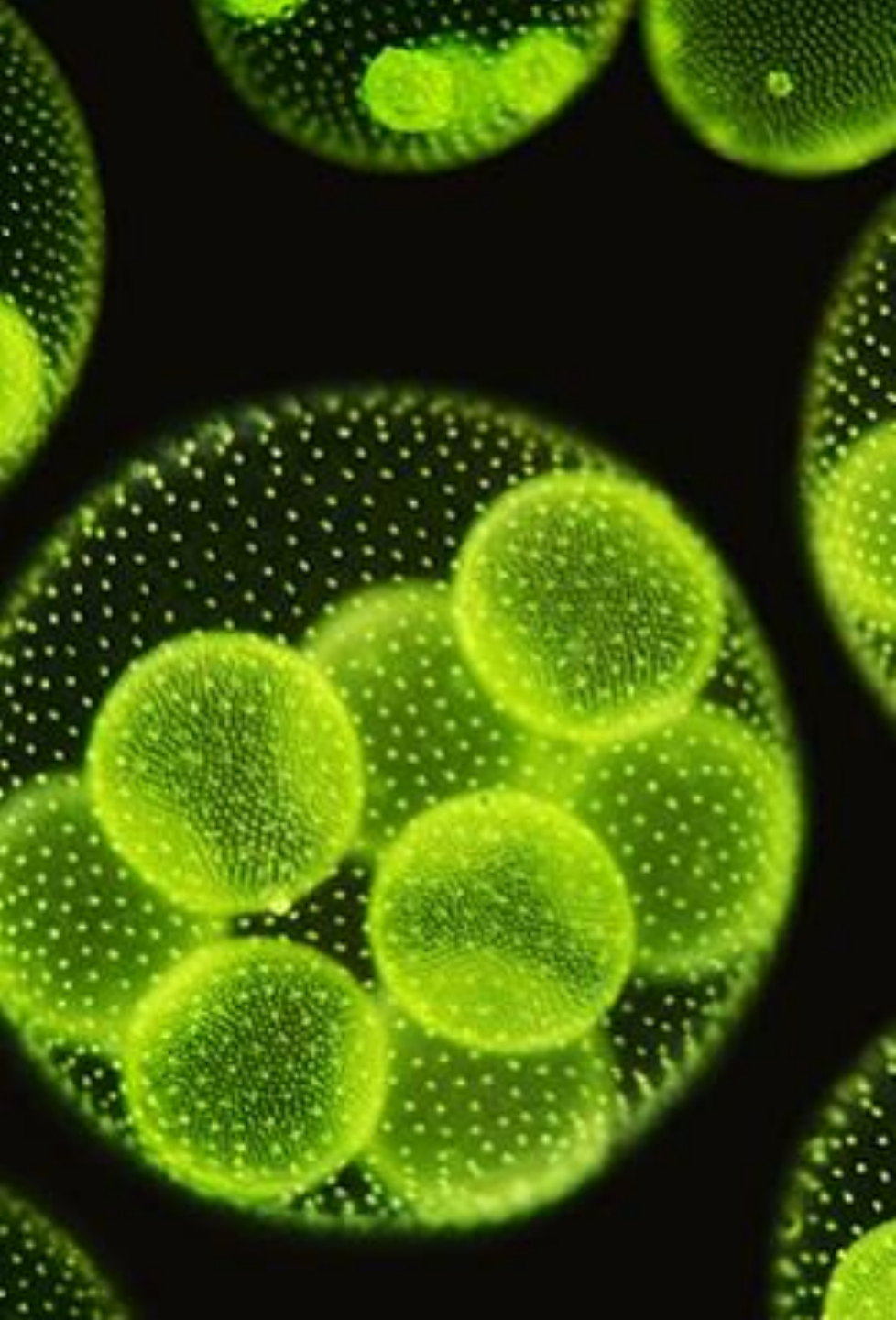
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Make observations about the different layers of the candy bar and record your observations.

Candy Bar Layer	Analogous Layer of Earth	Description of Earth's Layer
	Crust	
	Mantle	
	Outer Core	
	Inner Core	







# Structure of Earth

## Independent Practice

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1. What are the structures of each layer of the Earth?
2. What are the similarities and differences between continental and oceanic crust?

Think Critically

3. Which processes affected the formation and concentration of minerals on Earth?
4. Which evidence supports the statement that, on Earth, "Most minerals owe their existence to life."?

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## Independent Practice

Time Period	Major Events in Mineral Formation on Earth
4.4 – 2.4 bya	Earth's first 1,500 minerals formed as a result of repeated melting and cooling of Earth's crust (due to subduction and uplift of Earth's plates) and chemical weathering in early oceans and the atmosphere. Minerals included quartz, feldspar, mica, jadeite, and uranium.
2.2 – 2.0 bya	The appearance of photosynthetic organisms, which released oxygen into the atmosphere, caused iron in Earth's basalt crust to oxidize. More than 2,500 new minerals formed, including hematite, rhodonite, turquoise, and calcium carbonate.
2.0 – 1.0 bya	During a time of little change biologically, few new minerals formed.
700 – 500 mya	Earth cycled through periods of freezing and warming. Although few new minerals were formed, the concentration of existing minerals changed greatly, including an increase of fine-grained clay minerals at Earth's surface and carbonate minerals in warm, shallow oceans.
500 mya – present	Life on land began to thrive, including the appearance of land plants and fungi. The appearance and success of these two groups led to increased breakdown of rock through chemical and physical weathering, and clay minerals continued to increase at Earth's surface.